Addendum To The File Labeled 25MGUPGD.TXT

4 Megabyte Hardware Modification

A Shareware File by Barry Orlando Dated: December 28, 1989

Introduction

This text file provides a procedure which details further modification of the 2.5 megabyte 1040ST computer to a full 4 megabytes. This procedure assumes that you have already made the modifications described in the file called 25MGUPGD.TXT and replaced 16 256K dynamic RAM chips with 16 one megabit dynamic RAM chips. The 4 meg modification simply replaces the remaining 16 256K dynamic RAM chips with another 16 one megabit dynamic RAM chips. Reinstallation of the ST's metal RF shield cover will still not be impaired. Also since the 1 megabit DRAMs use CMOS technology, they use only one fourth the power for the same memory capacity, thus the built-in power supply of the 1040ST will not be affected.

Disclaimer of Liability

I make no claim that this modification will work for you. This procedure has not been verified by someone other that myself, so I can't claim any accuracy to its content or system performance. Performing this modification will be done at your own risk and may void the warranty on your computer.

Procedure

1. Remove all of the 1 meg chips from their sockets.

2. On the top side of the pc-board, remove all wires previously installed by the 2.5 meg modification. These are the ones attached to pin's 1 and 17 of the chip sockets and to the pc-board.

3. On the bottom side of the pc-board, remove the wire connecting pin 1 of U61 to pin 4 of U30; then remove the wire which connects pin 3 of

U61 to pin 1 of U30.

4. Desolder and remove the remaining 16 256K chips (U46 through U61).

5. Using the Exacto knife, cut the following traces on the bottom side of the pc-board:

a. Between U61's pin 4 and the thru-hole between resistors R91 and R94.
b. Between U46's pin 14 and the thru-hole between U46 and U47.
c. Between U61's pin 3 and U60's pin 3.
d. Between U46's pins 2 and 14. Do the same for U47 through U61.

6. Using the Exacto knife, cut the following traces on the top side of the pc-board:

a. Between U46's pin 14 and U22's pin 3.
b. Between U47's pin 14 and the thru-hole between U22 and U26.
c. Between pin 2's of U48 thru U61 and the thru-hole behind each chip.

7. Preparing New Sockets and Soldering Them In Place

a. Prepare sockets and "Socket Wrap-ID" plastic markers as were done for the 2.5 meg upgrade except that all but 3 will have their pin 18's flat and pointing straight out to the side. U46, U47 and U60 will require the sockets with their pin 18's bent back and down. Solder all the sockets in place.

8. Wiring

Wire the following connections on the top side of the pc-board:

a. Between U32's socket's pins 1 and 17, U46's new socket's pins 1 and 17, and pin 3 of U22. Solder this wire directly to the side of pin 3 of U22.
b. Between U16's new socket's pins 1 and 17, pins 1 and 17 of U54, and pin 18 of U27. Solder this wire to the thru-hole next to pin 18. Note: This thru-hole traces to pin 18 on the bottom side of the pc-board.
c. Between each of the remaining socket's pin 1 and 17 and a thru-hole in back of each new chip socket (i.e., U47 through U53 and U55 through U61). These thru-holes are the ones that the trace was cut where they traced back to either pin 2 or pin 14 of U47 through U61 but still trace over toward U22, U23, U26, and U27 and are the same ones previously used by the 2.5 meg modification. So that's 14 more wires altogether (i.e., each RAM chip's pins 1 and 17 will be connected to the pins 1 and 17 of the chip directly in front of it.

Wire the following connections on the bottom side of the pc-board: (Note: all pin numbers here refer to the pin numbers on the

pc-board, not the pin numbers of the new sockets or new ram chips)

d. Between pins 1 and 3 of U61.
e. Between pin 1 of U30 and pin 3 of U61.
f. Between all pin 14's of U46 through U61 and the 33 ohm resistor installed by the 2.5 meg upgrade. This connection is made on the same side of this 33 ohm resistor which is wired to pin 14 of U30.
g. Between all pin 2's of U46 through U61 and the thru-hole near resistor R91 which had its trace cut to U61's pin 4.
h. Between U61's pin 4 and resistor R76 (on the same side of the resistor as is wired to pin 4 of U30).

9. Inspect all solder joints with the magnifier for solder shorts and faulty connections. Verify that all connections were made correct.

10. Install the new 1 meg RAM chips into the front bank and reinstall the removed 1 meg RAM chips into the rear bank sockets.

11. Reassemble the computer and reconnect the monitor and power cord and power up. Wow..... 4 megs!

12. Run the Dynamic RAM checker program named MEMTESTR.TOS to verify proper operation of the new chips (Bank 0).

Shareware Policy

This file is provided as a part of the Shareware File 25MGUPGD.TXT ($15.00 registration fee required). Please feel free to send written comments or suggestions to:

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